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Forest Service, U.S. Department of Agriculture
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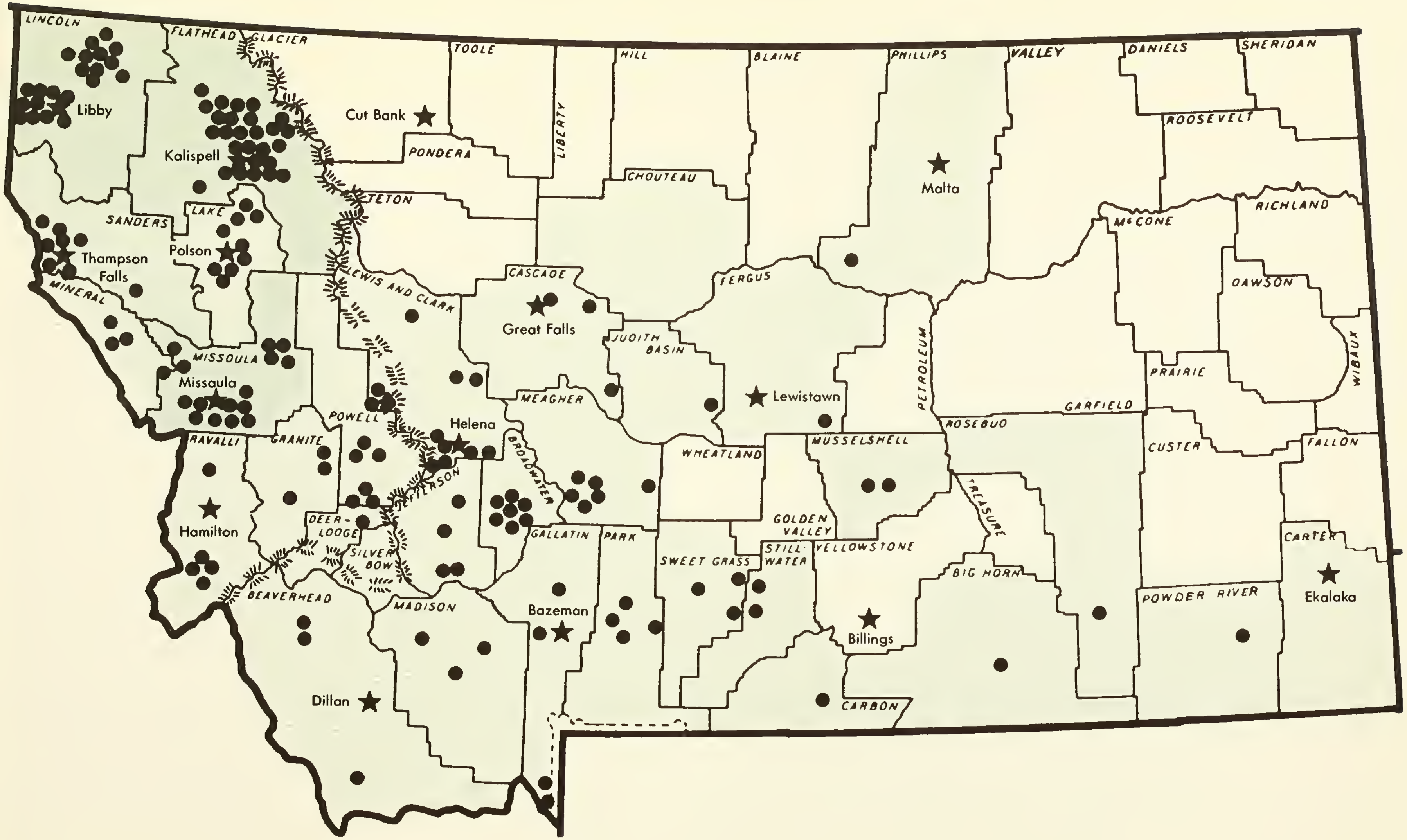

MONTANA SAWMILLS and SAW LOG PRODUCTION 1962

● Sawmill reported as operating in 1962

Saw log output by counties (million board feet)

☐ No reported production
▨ 100 to 200
▨ Less than 25
▨ 200 to 300

U.S. Forest Service
Research Paper INT-11
1964

OUTPUT OF TIMBER PRODUCTS IN MONTANA, 1962

By

Alvin K. Wilson
Division of Forest Economics and Recreation Research

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION
Forest Service
U.S. Department of Agriculture
Ogden, Utah
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This report summarizes survey information collected in 1963 on the 1962 output of roundwood products from Montana's forests. The term "roundwood" designates products that were received at plants "in the round" (as logs or bolts) for the first steps in manufacture. Accordingly, the data presented here do not include pulpwood made from sawmill or veneer plant residues (slabs, edgings, trim ends, shavings, sawdust, lathe cores) nor do they include fuelwood or any other items (industrial or domestic) made from these residues. However, to evaluate the extent to which sawed materials compete with round timbers in mine use, data on sawed materials used in mines in 1962 are summarized in one table in this report, but are not included elsewhere.

Detailed results of this survey are presented in a series of tables. The highlights of 1962 production and major production trends between 1952 and 1962 are discussed. Data for saw log output are presented in more detail than data for other products because of the predominance of saw logs in the State's total production.

Forest products surveys in the Rocky Mountain States and western South Dakota are part of the Intermountain Forest and Range Experiment Station's program for periodic appraisals of the forest situation. In western South Dakota, eastern Wyoming, Colorado, New Mexico, and Arizona, products surveys and other phases of Forest Survey work are conducted cooperatively with the Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

THE AUTHOR

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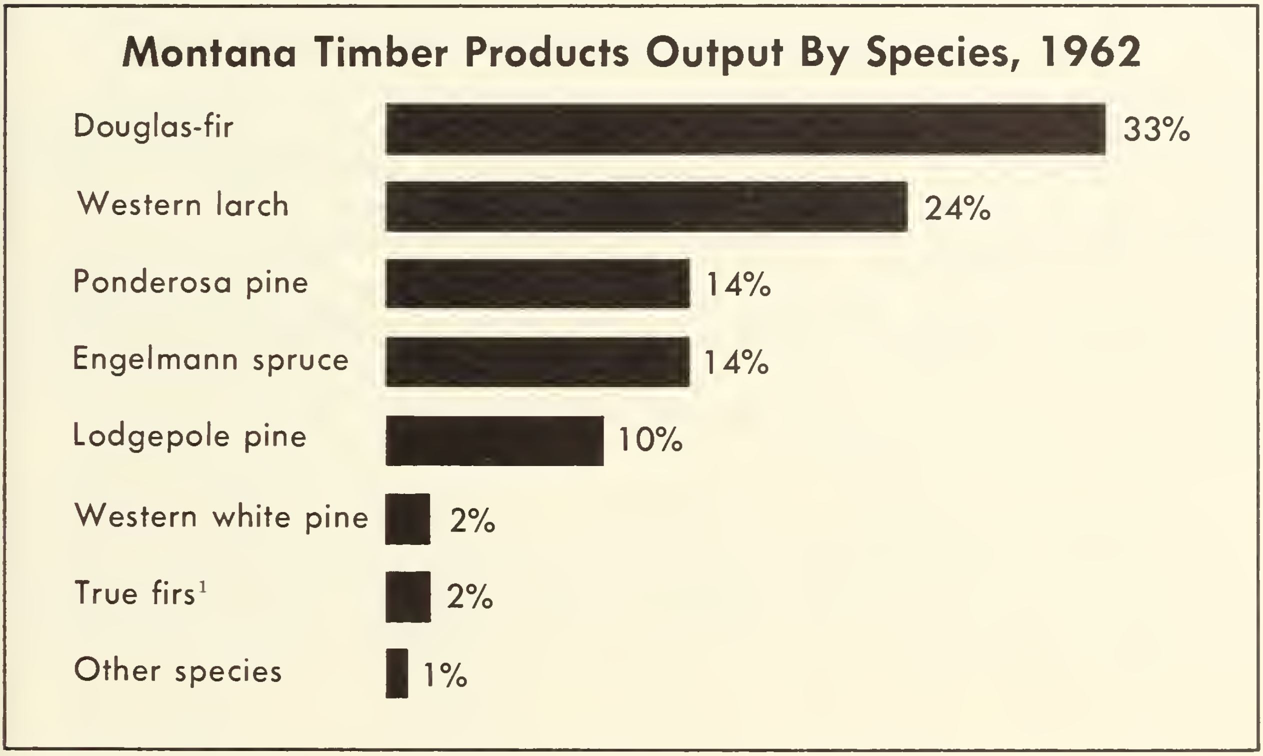
OUTPUT OF TIMBER PRODUCTS IN MONTANA, 1962

THE SITUATION IN 1962

The total output of roundwood products in Montana in 1962 was more than 207 million cubic feet--a gain of 44 percent since 1952. This total included production from live and dead trees, and from commercial[1] and noncommercial forest land. These products included saw logs (for lumber), veneer logs, pulpwood logs and bolts, utility poles, mine timbers, miscellaneous industrial wood (mainly converter poles and house logs), posts, fuelwood, and miscellaneous farm timbers. The total output from dead trees, cull trees,[2] and noncommercial forest land was estimated to have been 10 million cubic feet. Production from live, noncull trees on commercial forest lands was 197 million cubic feet.

The leading species were Douglas-fir and western larch.



[1]Grand and subalpine firs.

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[1] Forest land that is producing, or is capable of producing crops of industrial wood and not withdrawn from timber utilization.

[2] Live trees 5.0 inches or larger at breast height that are unmerchantable for saw logs now or prospectively because of defect, rot, or species.

National Forests supplied nearly 56 percent of the total and other public lands another 5 percent. Privately owned timberlands contributed 39 percent, of which more than half came from forest industry lands.[3]

Saw logs, by far the most important item produced from Montana forests in 1962, totaled nearly 1,276 million board feet[4] and accounted for 88 percent of the total volume output. Of this total, Montana sawmills received more than 1,246 million board feet and more than 29 million board feet were exported to mills in Idaho. The greatest concentration of sawmills--and the highest saw log output--was in western Montana (see inside front cover). In addition to the mills shown, there were an estimated 58 active small sawmills from which no saw log reports were received in the 1962 products survey. These mills received about 2.8 percent of the State's saw log output. Montana sawmills also received 32 million board feet of logs from Idaho. Almost half (49.6 percent) of the saw logs produced in Montana came from National Forests, and 4.3 percent came from other public lands. More than one-third of the total volume was Douglas-fir, 22 percent was western larch, and 16 percent was ponderosa pine.

Veneer log production in Montana has grown rapidly over the past few years so that, in cubic volume produced, veneer logs were the State's second most important primary forest product in 1962. Only one veneer plant was operating in Montana as recently as 1957. There were five veneer and plywood plants in 1962, which consumed nearly 111 million board feet of logs. Western larch supplied 49 percent of the total, and Douglas-fir about 37 percent.

Round pulpwood, totaling 46,936 standard cords, was shipped from Montana to mills in Idaho, Washington, and the Lake States in 1962. In volume, round pulpwood is the third most important timber product in the State. Although production has declined from the level maintained between 1952 and 1956, available data indicate little change since 1959; production in 1962 was practically the same as in 1959 when 46,749 cords were produced.[5]

Montana produced more than 122,000 commercial poles in 1962 from four species--western redcedar, lodgepole pine, western larch, and Douglas-fir. Of these, lodgepole pine, which furnished more than 105,000 poles, was clearly the predominant species. In volume, pole production accounted for slightly less than 1 million cubic feet of wood and ranked fourth in the State's roundwood products.

Other roundwood products--round mine timbers, miscellaneous industrial wood, posts, fuelwood, and miscellaneous farm timbers--collectively accounted for a total of more than 4.25 million cubic feet of wood in 1962. Miscellaneous farm timbers and posts were the major items and together accounted for about 80 percent of this total. Nearly all of the round mine timbers were used in eastern Montana, while most of the sawed timbers and lumber used in mines was consumed in western Montana.[6]

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[3] Lands owned by companies or individuals operating wood-using plants.

[4] The International $\frac{1}{4}$-inch log rule is used throughout this report.

[5] Intermountain Forest and Range Experiment Station file data compiled from a survey conducted in 1960.

[6] West of the Continental Divide.

TRENDS SINCE 1952

Montana's forest industrial facilities have grown a great deal since 1952, particularly those manufacturing lumber and plywood. Data for 1952, 1956, and 1962 (years for which information is available for all roundwood products) provide the following comparisons for percentage increases for all products, and indicate the general relationship with Census Bureau lumber figures:

Years	All roundwood products	Lumber
	(Percent increase)	
1952 to 1956	33	40
1956 to 1962	8	9
1952 to 1962	44	52

The comparison suggests that most of the 44 percent increase from 1952 to 1962 for all products had taken place by 1956. However, Census Bureau data for lumber production (used here for comparisons because they are available for each year and show a reasonably close relation to total output) indicate that production in 1956 was exceptionally high in relation to the general trend from 1952 through 1958. Census data also indicate that the average annual increase in production between 1952 and 1962 was about 5.1 percent.

Saw log production in 1962 was 85 percent greater than that of 1952 and 13 percent higher than in 1956 (again note that 1956 was an exceptional year). As a percentage of the total output, saw log production has also increased in importance, rising from 75 percent in 1952 to 88 percent of total output in 1962.

Although the number of active mills has decreased since 1956, the average mill produced more in 1962 than in 1956. Of the 333 mills operating in 1956, the average mill sawed nearly 3 million board feet of lumber, but the 209 mills that were active in 1962 averaged 5 million board feet. The following tabulation presents this information for sawmills in selected size-class groupings:

Number of mills by production class and their average lumber output in 1956 and 1962

Production class (bd. ft. per year)	Year	Active sawmills	Average annual production	Percent of total lumber production
		Number	Million bd.ft.	
10 million and more	1956	26	25.1	67
	1962	40	23.4	87
1 to 10 million	1956	78	3.4	27
	1962	40	2.7	11
Less than 1 million	1956	229	.3	6
	1962	129	.2	2

Several of the sawmills that were in the 1- to 10-million board-foot class in 1956 increased their production so that by 1962 they were in the largest production class. Although some of the mills that produced less than 1 million board feet in 1956 may have moved into the middle class by 1962, it is apparent that a large percentage of them had become inactive by 1962.

Patching veneer in a Montana plywood plant. Montana had only one plywood plant in 1957 but now has five.

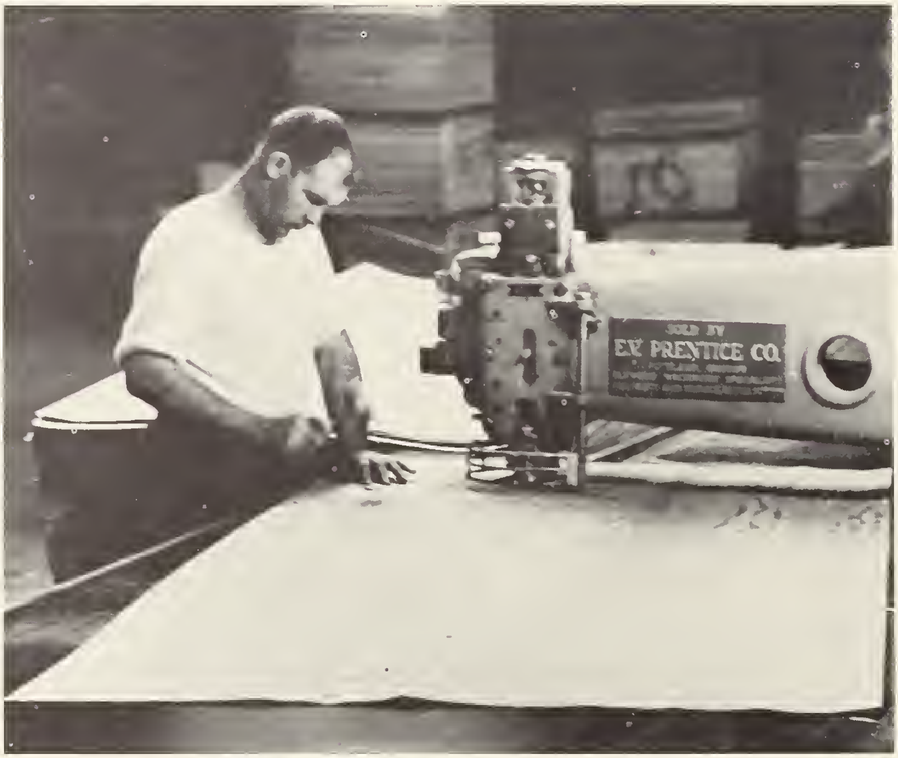

Photo by C. R. Lockard

Veneer and plywood production has grown rapidly in Montana in the last 5 years. From 1952 through 1957 there was only one active plywood plant in the State, and production of veneer logs was therefore a minor part of the total products output. In 1958, a second plant began operations, two more were in production by 1960, and in late 1962 a fifth plywood plant started operating. This expansion was so rapid that by 1962 the production of veneer logs was second only to that of saw logs.

Production of round pulpwood in Montana declined markedly in the last decade. All of Montana's round pulpwood has always been shipped to mills outside the State. These shipments were at a comparatively high level between 1952 and 1956, averaging about 110,000 standard cords per year. However, expansion in pulp production in northern Idaho, Washington, and the Lake States in the late 1950's was accompanied by increasing dependence on chipped sawmill residues for pulpwood. This shift in wood utilization was a principal cause of the decline in round pulpwood shipments to these areas that occurred between 1956 and 1959. Since 1959, production of round pulpwood appears to have leveled off at about 47,000 cords per year.

Montana's only pulpmill, which operates entirely on chipped sawmill residues, went into production in 1957 and by 1963 attained a daily pulp production capacity of 700 tons.[7]

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[7] Lockwood's Directory of the Paper and Allied Trades. 1963.

The estimate of 5,261,000 cubic feet for 1962 output of all other roundwood products is considerably lower than the 1956 estimate of 21,458,000 cubic feet. This difference is due to declines in output of commercial poles, round mine timbers, and fuelwood. Estimated outputs for 1962 for miscellaneous industrial wood, posts, and miscellaneous farm timbers were all higher than for 1956.

Annual surveys of commercial pole production in the northern Rocky Mountain area (northeastern Washington, Idaho, and Montana) have shown that pole production, which had been declining rapidly before 1955, declined less rapidly and tended to level off in the late 1950's.[8]

The use of round mine timbers has also shown a marked decline; increased use of sawed timbers and advances in mining methods were among the factors contributing to this decline.

The decline in fuelwood consumption follows the national trend[9] which reflects a shift to more easily handled fuels and to electricity.

SURVEY PROCEDURES

The survey of saw log receipts at sawmills was based on a late 1962 listing of mills that had been made as complete as possible by reviews by Forest Service personnel and the Montana State Forester's office. All listed mills were contacted by mail to obtain data on their saw log receipts for 1962. All mills outside the State that were considered as possible recipients of logs from within the State were also asked to report. Field sampling was used to provide data for estimating, within acceptable error limits, the receipts of sawmill operators who did not furnish mail reports (nonrespondents).

The standard error for that part of the total saw log receipts that was estimated by field sampling nonrespondents was 21,717,000 board feet, or 1.70 percent of the State's total saw log receipts. The odds, then, are 2 to 1 that the true State total, estimated at 1,275,688,000 board feet in this survey, was between 1,253,971,000 and 1,297,405,000 board feet.

Similar procedures were used in the survey of round mine timbers and sawed timbers and lumber received at Montana mines in 1962. Lists of mines were compiled from State sources[10] and a mining industry directory,[11] and nonrespondents were sampled by field contacts. For round timbers, the standard error of the estimated part of receipts from Montana timberlands was 4,711 cubic feet or 1.74 percent of the State total. At 2 to 1 odds the true State total for round mine timbers was therefore between 265,809 and 275,231 cubic feet. For sawed timbers and lumber receipts, the standard error was 0.18 percent of the State total so that, at 2 to 1 odds, the true State total was between 18,057,000 and 18,121,000 board feet, lumber tally.

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[8] Wilson, Alvin K. Commercial pole production in the northern Rocky Mountain area in 1962. Intermountain Forest and Range Expt. Sta. Res. Note INT-9, 6 pp., illus. 1963.

[9] U.S. Bureau of the Census. U.S. Census of Agriculture: 1959, vol. II, General Report Statistics by Subjects. U.S. Govt. Printing Office, Wash., D.C., 1,485 pp. 1962.

[10] Report and Statistical Tables of Department of Safety IN: Forty-Seventh Annual Report of the Montana Industrial Accident Board for July 1961 through June 1962.

[11] Miller Freeman Publications. Mining World Catalog Survey and Directory Number, 246 pp. 1962.

Reports were obtained by mail and field contacts with all plants that were known to receive veneer logs, round pulpwood, commercial poles, and miscellaneous industrial wood from Montana in 1962; estimates for these products are accordingly considered to be without sampling error.

Estimates for 1962 production of posts, fuelwood, and miscellaneous farm timbers were derived from reports furnished by the National Forests, the State Forester, Bureau of Land Management, and the Bureau of Indian Affairs, supplemented by trend estimates obtained from U.S. Bureau of the Census publications on farm use of these products. Since this procedure precluded the computation of a sampling error by the methods used with the preceding products, no error estimate has been assigned.

* * * * *

Table 1.--Output of timber products in Montana, by products and species groups, in standard units, 1962

Product		Quantity		
		Total	Softwoods	Hardwoods
Saw logs	M bd. ft.[1]	1,275,668	1,275,242	446
Veneer logs	M bd. ft.[1]	110,654	110,654	0
Mine timbers (round)	M cu. ft.	271	270	1
Miscellaneous industrial wood[2]	M cu. ft.	281	281	0
Miscellaneous farm timbers	M cu. ft.	2,108	2,108	0
Pulpwood (round)	M std. cds.[3]	47	47	0
Fuelwood	M std. cds.	4	4	0
Poles	M pieces	122	122	0
Posts (round and split)	M pieces	1,047	1,047	0
All products converted to	M cu. ft.	207,289	207,224	65

[1] International $\frac{1}{4}$-inch log rule.

[2] Includes house logs and converter poles.

[3] Rough wood basis.

Table 2.--Saw log receipts of Montana sawmills by source areas, 1962

Source area	Volume	Percent
	M bd. ft.[1]	
Western Montana	1,108,865	86.7
Eastern Montana	137,523	10.8
Northern Idaho[2]	30,391	2.4
Southern Idaho	1,523	.1
Total	1,278,302	100.0

[1] International $\frac{1}{4}$-inch log rule.

[2] North of the Salmon River.

Table 3.--Sawmill log receipts from Montana timberlands by species, subunits, and county of origin, 1962

Subunit and county	Log species								All species	
	Ponderosa pine	White pines[1]	Lodgepole pine	Douglas-fir	True firs[2]	Engelmann spruce	Western larch	Other species[3]	Volume	Percent
	Thousands of board feet, International $\frac{1}{4}$-inch rule[4]									
WESTERN										
Flathead	32,116	7,095	5,487	52,059	2,575	56,620	63,021	276	219,249	17.2
Granite	1,377	0	3,728	25,576	272	3,568	0	0	34,521	2.7
Lake	14,845	1,485	853	14,862	1,150	11,254	16,638	306	61,393	4.8
Lewis and Clark[5]	2,350	0	2,392	10,937	1,192	3,578	0	0	20,449	1.6
Lincoln	35,422	12,696	15,515	79,434	11,438	24,488	99,663	13,820	292,476	22.9
Mineral	20,367	3,050	200	15,960	1,225	3,182	12,658	636	57,278	4.5
Missoula	45,877	1,081	5,431	71,653	2,795	17,283	58,401	82	202,603	15.9
Powell, Silverbow[5]	6,123	0	4,390	29,401	163	1,324	6,203	0	47,604	3.7
Ravalli	14,359	0	224	40,966	1,763	42,137	80	0	99,529	7.8
Sanders	25,674	9,381	2,822	26,485	4,102	6,695	24,951	1,549	101,659	8.0
Total, Western	198,510	34,788	41,042	367,333	26,675	170,129	281,615	16,669	1,136,761	89.1
Percent of total	17.5	3.0	3.6	32.3	2.3	15.0	24.8	1.5	100.0	
EASTERN										
Broadwater	252	0	2,113	12,839	163	0	0	0	15,367	1.2
Gallatin	0	0	25,579	4,181	0	586	0	0	30,346	2.4
Madison	0	0	131	4,242	54	556	0	0	4,983	.4
Meagher	11	0	14,151	21,528	0	1,300	0	0	36,990	2.9
Park	0	0	5,600	14,478	0	182	0	0	20,260	1.6
Beaverhead, Jefferson	6	0	758	1,467	34	1,486	0	0	3,751	.3
Bighorn, Carter, Musselshell, Powder River, Rosebud	2,132	0	0	120	0	0	0	0	2,252	.2
Carbon, Stillwater, Sweet Grass	150	6	22	961	0	6	0	0	1,145	.1
Cascade, Judith Basin, Lewis and Clark[5]	1,895	0	17,941	3,042	97	363	0	0	23,338	1.8
Chouteau, Phillips, Fergus	403	0	75	17	0	0	0	0	495	(6)
Total, Eastern	4,849	6	66,370	62,875	348	4,479	0	0	138,927	10.9
Percent of total	3.5	0	47.8	45.3	.2	3.2	0	0	100.0	
STATE TOTAL	203,359	34,794	107,412	430,208	27,023	174,608	281,615	16,669	1,275,688	100.0
Percent of total	16.0	2.7	8.4	33.7	2.1	13.7	22.1	1.3	100.0	

[1] Practically all western white pine, but includes a small amount of whitebark and limber pines.

[2] Grand fir and subalpine fir.

[3] Western hemlock, western redcedar, aspen, and cottonwood.

[4] Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

[5] Lewis and Clark, and Silver Bow Counties overlap the Continental Divide. All saw log receipts from Silverbow County were from the western side of the Divide.

[6] Less than 0.05 percent.

Table 4.--Output of timber products in Montana by species, 1962

Product	Species									Total	Percent
	Ponderosa pine	White pines[1]	Lodgepole pine	Douglas-fir	True firs[2]	Engelmann spruce	Western larch	Western redcedar	Other species[3]		
	Thousand cubic feet										
Saw logs	29,080	4,976	15,360	61,520	3,864	24,968	40,271	1,742	642	182,423	88.0
Veneer logs	141	37	144	5,864	184	1,659	7,791	3	1	15,824	7.6
Pulpwood (round)	0	7	2,173	0	69	1,067	463	0	2	3,781	1.8
Poles	0	0	651	3	0	0	220	92	0	966	.5
Mine timbers (round)	29	0	214	22	5	0	0	0	1	271	.1
Miscellaneous industrial wood	78	0	97	106	0	0	0	0	0	281	.2
Posts, fuelwood, miscellaneous farm timbers	100	0	1,355	1,219	0	206	569	294	0	3,743	1.8
Total	29,428	5,020	19,994	68,734	4,122	27,900	49,314	2,131	646	207,289	
Percent of total	14.2	2.4	9.6	33.2	2.0	13.5	23.8	1.0	.3		100.0

[1] Practically all western white pine but includes a small amount of whitebark and limber pines.
[2] Grand, white, and subalpine firs.
[3] Western hemlock and cottonwood.

Table 5.--Output of timber products by land ownership classes, Montana, 1962

Product	Total volume	Land ownership classes				
		National Forest land	Other public lands	Forest industry lands[1]	Other private lands	All ownerships
	Thousand cu. ft.	Percent				
Saw logs	182,423	49.6	4.3	18.0	16.1	88.0
Veneer logs	15,824	3.6	.1	2.7	1.2	7.6
Pulpwood (round)	3,781	1.1	.5	.2	(2)	1.8
Poles	966	.2	(2)	.1	.1	.5
Mine timbers (round)	271	.1	0	(2)	(2)	.1
Miscellaneous industrial wood	281	.1	0	(2)	(2)	.2
Posts, fuelwood, miscellaneous farm timbers	3,743	1.0	.1	.4	.3	1.8
Total	207,289	55.7	5.1	21.4	17.8	100.0

[1] Lands owned by companies or individuals operating wood-using plants.
[2] Less than 0.05 percent.

Table 6.--Round and sawed timbers and lumber received at mines in eastern and western Montana, 1962

Subunit	Round timbers			Sawed timbers and lumber		
	All mines	Coal mines	Other mines	All mines	Coal mines	Other mines
	- - - Thousand cubic feet - - -			- - - Thousand board feet - - -		
Western Montana	18	0	18	15,732	0	15,732
Eastern Montana	253	21	232	2,357	970	1,387
Total	271	21	250	18,089	970	17,119

Table 7.--Lumber production and numbers of active sawmills by size classes in Montana, 1956 and 1962

Sawmill size class (M bd. ft. per year)	1956[1]			1962		
	Lumber production		Active mills	Estimated lumber production[2]		Active mills[3]
	Million bd. ft.[4]	Percent	Number	Million bd. ft.[4]	Percent	Number
Less than 500	22	2	189	12	1	102
500 to 999	43	4	40	13	1	27
1,000 to 4,999	156	16	63	49	5	30
5,000 to 9,999	107	11	15	60	6	10
10,000 and over	653	67	26	935	87	40
Total	981	100	333	1,069	100	209

[1] Wilson, Alvin K. Montana lumber production, 1956. Intermountain Forest and Range Expt. Sta. Forest Survey Release 2, 7 pp., illus. 1958.

[2] Estimated from Census Bureau's lumber production total for Montana's 1962 production (1,069 million board feet, lumber tally) on the assumption that lumber production was distributed among sawmill size classes in proportion to their reported saw log receipts.

[3] Mill size class estimated from saw log receipts rather than from lumber production.

[4] Lumber tally.

Table 8.--Output of timber products in Montana, and percentages of totals for major products, 1952, 1956, and 1962

Product	1952[1]		1956[2]		1962	
	Output	Percent[3]	Output	Percent[3]	Output	Percent[3]
Saw logs . . . M bd. ft.[4]	691,001	75	1,128,614	84	1,275,688	88
Veneer logs . M bd. ft.[4]	([5])	([5])	([5])	([5])	110,654	8
Pulpwood . . . M std. cds.[6]	140	9	134	5	47	2
All other[7] . . M cu. ft.	23,642	16	21,458	11	5,261	2
Total converted to . . . . M cu. ft.	144,018	100	191,626	100	207,289	100

[1] U.S. Forest Service. Timber resources for America's future. U.S. Dept. Agr. Forest Resource Rpt. 14, 713 pp., illus. 1958. (Table 13, pp. 526-527.)

[2] (a) Wilson, Alvin K. Log production in Idaho and Montana, 1956. Intermountain Forest and Range Expt. Sta. Res. Note 54, 7 pp. 1958.

(b) Pissot, Henry J., and Harold E. Hanson. The forest resource of Western Montana. U.S. Forest Serv. Resource Bull. INT-1, 39 pp., illus. 1963.

(c) Intermountain Forest and Range Expt. Sta. file compilations for the 1956 products survey.

[3] Based on cubic-foot volume equivalents for products whose outputs are shown in other standard volume units.

[4] International $\frac{1}{4}$-inch log rule.

[5] To avoid disclosing the operations of the single veneer plant that was in operation in 1952 and 1956, veneer log volumes have been included with saw logs.

[6] Rough wood basis. Includes round pulpwood only; i.e., does not include pulpwood from sawmill and veneer plant residues.

[7] Includes commercial poles, round mine timbers, miscellaneous industrial wood, posts, fuelwood, and miscellaneous farm timbers.

Table 9.--Montana lumber production, 1952-1962

Year	Quantity
	Millions of board feet lumber tally
1952	702
1953	757
1954	738
1955	785
1956	981
1957	773
1958	924
1959	1,044
1960	985
1961	985
1962	1,069

Source: U.S. Bureau of the Census

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